Listing of Claims

The following listing of claims will replace all prior versions, and listings, of claims in the subject application:

1. (Currently Amended) A method of performing an ~~automatic and rapid~~ auditory screening test on a patient by operating a system for performing objective screening audiometery, the method comprising:

a. operating a digital-to-analog converter ~~of a data acquisition module~~ of the system to acoustically present at least one modulated noise stimulus at a specific intensity to at least one ear of the patient;

b. operating [[the]] a data acquisition module to provide recording of response data related to the patient's response to the at least one stimulus;

c. operating a processor of the system to perform signal analysis on said response data to generate result data;

d. operating the processor of the system to evaluate the result data using at least one statistical technique to determine the presence of at least one auditory steady-state response; and [[,]]

e. operating the processor of the system to provide a pass/fail test result based on steps a-d which indicates whether an ear has passed or failed said screening test, whereby an ear is assessed with normal or abnormal hearing, respectively, wherein

a fail test result from said screening test indicates that a diagnostic threshold hearing test is merited.

2. (Original) The method of claim 1, wherein the at least one modulated noise stimulus includes at least one of: amplitude modulated broadband noise (BBN), amplitude modulated

band-pass noise, amplitude modulated high-pass noise (HPN), and enhanced high-pass noise (EHPN).

3. (Currently Amended) The method of claim 1, wherein for step (d) the statistical technique includes generating a significance series by sequentially analyzing ~~combined~~ portions of the response data to generate a significance series of probability values for the at least one auditory steady-state response, and subjecting the significance series to a statistical conditional criteria to determine the presence of the response.

4. (Previously Presented) The method of claim 3, wherein said subjecting to a statistical conditional criteria includes using at least one of: a consecutive count, a relative count and an adjusted critical value.

5. (Original) The method of claim 3, wherein the probability values of said significance series are compared to a critical value of at least one of: a 0.05 value, a 0.01 value, a constant value, a changing value, and a Bonferroni adjusted critical value.

6. (Original) The method of claim 1 in which step (c) comprises using weighted averaging in said signal analysis.

7. (Original) The method claim 1 in which step (c) includes:

(i) forming a plurality of epochs of response data using said response data;

(ii) forming a plurality of sweeps of the response data by concatenating the plurality of epochs of response data;

(iii) classifying each epoch of response data selected from the plurality of epochs of data as a rejected epoch if the epoch of data fails to meet one or more of the following criteria: having an SNR level above a specified value for at least one specified frequency bin of an amplitude spectrum of the epoch of data; and having an inadequate value for passing a homogeneity criteria;

(iv) forming a plurality of accepted sweeps of the response data by concatenating the plurality of non-rejected epochs of data; and

(v) converting the accepted sweeps into the frequency domain to generate said result data.

8. (Original) The method of claim 7, wherein the homogeneity criteria include at least one of the following: intra-sweep homogeneity criteria which are adjusted based upon statistical evaluation of at least one characteristic that is measured for each epoch of data within each sweep, and intra-sweep homogeneity criteria which are adjusted based upon at least one characteristic that is measured for each epoch of data within two or more sweeps.

9. (Original) The method of claim 8, wherein the at least one characteristic that is measured for each epoch of data is at least one of the following: an estimate for EEG-noise energy, an estimate of signal energy, and an SNR estimate.

10. (Currently Amended) The method of claim 1, wherein said threshold hearing test ~~in the case of a fail result a hearing threshold of the patient~~ is subsequently obtained for at least one stimulus by iteratively performing steps a-d ~~a number of times~~ using at least two different stimulus intensities, and during each iteration generating a significance series wherein for each different stimulus intensity, said auditory steady-state response is determined to be statistically present when selected statistical conditional criteria are met, and the data from the lowest intensity for which a steady-state response is determined to be statistically present is used to estimate the hearing threshold for said steady-state ~~response~~ ~~stimulus~~.

11. (Currently Amended) A method of performing ~~an automatic and rapid~~ a screening hearing test on a patient by operating a system for performing objective audiometery, the method comprising:

a. operating a digital-to-analog converter of a data acquisition module of the system to acoustically present at least one transient stimulus at a rapid periodic rate to at least one ear of the patient;

b. operating the data acquisition module to provide recording of response data related to the patient's response to the at least one transient stimulus, wherein [[several]] multiple epochs of response data are recorded and ~~the at least one transient stimulus is presented at a~~ said rapid periodic rate [[that]] provides an inter-stimulus interval that is a sub-multiple of an epoch ~~length~~;

c. operating a processor of the system to perform signal analysis on said response data to generate result data;

d. operating a processor of the system to evaluate the result data using at least one statistical technique, said statistical technique comprising use of a significance series and statistical conditional criteria; and

e. operating the processor of the system to provide a pass/fail test result based on steps a-d which indicates whether said ear has passed or failed said screening hearing test, wherein

a fail test result from said screening test indicates that a diagnostic threshold hearing test is merited.

Claims 12 - 19 (canceled).

20. (Currently Amended) A method of performing auditory screening test on a patient by operating a system for performing objective screening audiometry using a Multiple Intensity Stimulus Test method ~~for rapidly evaluating auditory function of patient by operating a system for performing objective audiometry~~ , the method comprising:

a. operating a digital-to-analog converter ~~of a data acquisition module~~ of the system to acoustically present in [[an]] concurrent fashion at least one periodic acoustic stimulus using at least two different intensities, of which a first intensity is a screening intensity and a second intensity is a higher intensity, to at least one ear of a subject;

b. operating [[the]] a data acquisition module to provide recording of steady-state response data related to the patient's response to the at least one periodic acoustic stimulus;

c. operating a processor of the system to perform signal analysis on said response data to generate result data, and

d. operating a processor of the system to perform calculations upon the result data to statistically evaluate the presence of steady-state responses to at least said at least two different intensities; and

e. operating a processor of the system to provide: a pass/fail result for a screening test based on steps a-d and an estimate of the patient's hearing threshold, wherein a fail test result from said screening test indicates that a diagnostic threshold hearing test is merited.

21. (Currently amended) A system for performing [[an automatic and rapid]] a screening test on a patient, the system comprising:

a. a computer-implemented signal source configured to acoustically present ~~presenting~~ at least one modulated noise stimulus to at least one ear of the patient,

b. a computer-implemented data acquisition unit configured to record ~~recording~~ steady-state response data related to the patient's response to said at least one modulated noise stimulus;

c. a processor configured to perform signal analysis on said steady-state response data to generate ~~frequency-domain~~ result data;

d. said processor being further configured to statistically evaluate the ~~frequency domain~~ result data to determine the presence of at least one auditory steady-state response; and [[,]]

e. said processor being further configured to generate a pass/fail result based on steps a-d which indicates whether said subject has passed or failed said screening test, wherein

a fail test result from said screening test indicates that a diagnostic threshold hearing test is merited.

Claims 22 - 39 (canceled).

40. (Currently Amended) A method of performing an auditory screening test on a patient ~~testing auditory thresholds according to a Conditional MASTER Screening Test,~~ by operating a system for performing objective screening ~~sceening~~ audiometery according to a Conditional MASTER Screening Test, the method comprising:

a. operating a digital-to-analog converter ~~of a data acquisition module~~ of the system to present at least three acoustic stimuli to at least one ear of a patient;

b. operating [[the]] a data acquisition module of the system to provide recording of SS-AEP data epochs related to the patient's response to the at least three acoustic stimuli;

c. operating the data acquisition module ~~to provide classifying of said SS-EP data epochs into accepted epochs and rejected epochs on the basis of selected criteria;~~

~~d. operating the data acquisition module~~ to provide processing of the ~~accepted~~ data epochs to determine which SS-AEPs are statistically present;

[[e]] d. operating the data acquisition module to repeat steps a-c [[a-d]] until a specified criterion has been met; and

[[f.]] e. operating the data acquisition module to provide, based on steps a-d, a screening pass result if at least a specified number of SS-AEPs were statistically present within at least one ear and a screening fail result if less than a specified number of SS-AEPs were not statistically present within at least one ear, wherein

a fail test result from said screening test indicates that a diagnostic threshold hearing test is merited.

41. (Currently Amended) The method of claim 40, wherein in step [[d, wherein]] c an SS-AEP is determined to be statistically present when a significance series has been generated for each SS-AEP and the statistical series has successfully met one or more statistical conditional criteria.

42. (Currently Amended) The method of claim 40, wherein the specified [[criteria]] criterion of step d [[e,]] is based upon normative age appropriate screening-test data and is at least one of: an amount of recording time defined for a screening test and a level of background EEG-noise present in the recording.

43. (Currently Amended) The method of claim 40, wherein said SS-EP data epochs are further processed in step c to provide classifying of said SS-EP data epochs into accepted epochs and rejected epochs on the basis of selected criteria, and wherein said classifying of SS-AEP data [[in step "c"]] is based upon failure or success of said SS-AEP data epoch in meeting homogeneity criteria.

Claims 44-56 (canceled).